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REMARKS

Claims 1-23 are all the claims presently pending in the application.

It is noted that, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

The Examiner objects to claims 18 and 19 as being repetitious. Applicant gratefully acknowledges the Examiner's indication of this error and believes that the above claim amendments appropriately address the Examiner's concern and respectfully request that the Examiner reconsider and withdraw this objection.

Claims 18 and 19 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Applicant gratefully acknowledges the Examiner's indication of this error and believes that the above claim amendments appropriately address the Examiner's concern and respectfully request that the Examiner reconsider and withdraw this rejection.

Claims 1, 2, 11-13, 20, and 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Sundelin, et al. (U.S. Patent No. 6,144,861) in view of Douzono, et al. (U.S. Patent No. 5,574,983). Claims 3-5, 7-9, 14, 15, 17-19, and 23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Sundelin, further in view of Douzono, and further in view of Chheda, et al. (U.S. Patent No. 6,515,975).

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

As described in, for example, claim 1, the claimed invention is directed to a transmit power control method in a CDMA mobile communication system. A checking step checks whether one or more base transceiver stations (BTSSs) are connected. In a calculating step,

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when a result of the checking step shows that two or more BTSs are connected to a specific mobile station, CH receive SIRs (Signal to Interference Ratios) corresponding to the connected BTSs are selected, using a predetermined selection criterion for selecting CH receive SIRs (Signal to Interference Ratios) corresponding to certain ones of the connected BTSs, and making a calculation by using values of the selected SIRs, and a calculation by using the selected values is made. In a reference value changing step, the value of a reference value Sref is changed according to a result of the calculation.

When the result of the checking step shows that only one BTS is connected, the reference value Sref is set to an upper limit in an upper limit setting step. In a reporting step, the changed reference value Sref is reported to all the connected BTSs. It is possible to decide the reference value Sref in response to a variation in selection/synthesis gain due to an increase or a decrease of the number of connected BTSs.

As explained in the specification, the present invention provides a method to change, at a high speed, the reference SIR used for reference in a high-speed closed loop control of an up link in a transmit power control method in a CDMA mobile communication system.

The conventional methods discussed, beginning at line 20 of page 2 of the specification, for this loop control is based on measurement of the frame error rate. Using either of the two methods takes time to execute to achieve an optimal value, resulting in excessive transmit power and user interference.

As explained beginning at line 5 of page 12, the claimed invention, on the other hand, by using the Perch CH receive SIR information to decide whether the reference SIR should be changed, permits a rapid change of the reference SIR, relative to the time required in the conventional methods, thereby reducing the problems of excessive transmit power and interference in the system.

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II. THE PRIOR ART REJECTIONS

The Examiner continues to allege that Sundelin, as modified by Douzono, renders obvious the present invention as defined by claims 1, 2, 11-13, 20, and 21, and, when further modified by Chheda, renders obvious the present invention defined by claims 3-5, 7-9, 14, 15, 17-19, and 23.

Applicant again respectfully disagrees.

In paragraph 2 on page 2 of the Office Action, as best understood, the Examiner alleges that the process of "selecting CH receive SIRs corresponding to the connected SIRs" is satisfied in Sundelin because this reference inherently teaches to select "... only the links involved in the soft handover."

Although Applicant submits that one of ordinary skill in the art would readily recognize that the original claim language is clearly distinct over Sundelin, in order to expedite prosecution, claim language has been amended to clarify the selection involve a choice among all the BTSs currently connected to a specific mobile station. Sundelin fails to teach or suggest this selection of only certain ones of the connected BTSs, as based on a selection criterion.

Neither Douzono nor Chheda overcomes this basic deficiency in Sundelin.

Hence, turning to the clear language of the claims, in Sundelin there is no teaching or suggestion of: "... a checking step of checking whether one or more base transceiver stations (BTSs) are connected to a specific mobile station; a calculating step of, when a result of the checking step shows that two or more BTSs are connected, using a predetermined selection criterion for selecting CH receive SIRs (Signal to Interference Ratios) corresponding to certain ones of the connected BTSs, and making a calculation by using values of the selected SIRs...", as required by claim 1. The remaining independent claims have similar language.

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For purpose of Appeal, Applicant's comments concerning secondary references Duozone and Chheda remain unchanged, in spite of the Examiner's comments in paragraphs 5 and 6, since the Examiner's choice of wording from these references is not what has been described in the plain meaning of the claimed invention.

Along this line, Applicant submits the following additional specific technical comments related to the rejections currently of record in the latest Office Action.

Concerning paragraph 15, beginning on page 5 of the Office Action, directed to claims 1 and 11-13:

- Relative to the step of checking whether one or more base transceiver stations (BTSs) are connected, in the corresponding part of Sundelin, a method of selecting a base station for soft handover is disclosed. The method is that among the base stations presently not communicating with terminals, a base station with which good communication quality is likely to be maintained is selected. In contrast, the present invention selects a base station which contributes towards diversity gain among base stations which are connected to RNCs over soft handover.
- Relative to the step of selecting CH receive SIRs and making a calculation, in the corresponding part of the Sundelin reference, general methods of Closed Loop Power Control and Outer Loop Power Control are disclosed. Namely, a method of changing an object SIR is not explained. On the other hand, the present invention discloses a method of obtaining an object SIR based on received SIRs at the base stations which is especially contributing toward diversity gain.
- Relative to the step of setting the reference value S_{ref} to an upper limit, in

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the corresponding part of Sundelin, an upper limit value of downlink transmission power at closed loop power control is mentioned. The present invention, on the other hand, sets a value to be an upper limit of the calculation result on the object SIR calculation process.

- Relative to the step of reporting the changed reference value Sref to all the connected BTSs, the corresponding part of Sundelin does not explicitly mention that an object SIR is reported to all the connected BTSs. Sundelin merely discloses that when multiple base stations are in a connected state, an RNC is involved in Outer Loop Power Control. However, the reporting of the object SIR to all the base stations is not a material element in the present invention.
- Relative to the Examiner's indication that to change a reference value according to the number of base stations is obvious over Sundelin and Douzono, Applicant submits the following. The change of an object SIR may be read from Sundelin but the change of the object SIR based on the number of base stations is not perceived from Douzono. The mere concept that the number of connected base stations is used for the SIR includes such base stations that do not contribute toward diversity gain in any significant degree. In contrast, the present invention selects base stations that significantly contribute toward diversity gain and, thus, can cure this defect.
- Relative to the Examiner's indication that to set the reference value Sref to an upper limit when only one BTS is connected is obvious over Sundelin and Douzono, Applicant submits the following. When only the number of connected base stations is considered in order to decide the object SIR, such base stations that do not so much contribute toward diversity gain are also

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included. In contrast, the present invention picks up base station that significantly contribute toward diversity gain. Consequently, even when there are connected base stations and only one base station contributes toward the diversity gain, the object SIR is set to an upper limit.

Relative to the Examiner's indication that to decide the reference value S_{ref} in response to a variation in selection/synthesis gain due to an increase or a decrease of the number of connected BTSs is obvious, Applicant submits the following. Douzono does not consider the situation where selection/synthesis gain does not increase even when the number of connected base stations increases. For example, when a terminal with intense transmission power moves into an area of a certain base station, reception quality at the base station deteriorates and the base station may not contribute toward the selection/synthesis gain. The present invention simplifies the selection of the base stations that contribute toward the selection/synthesis gain, for example, by electing the upper two base stations showing good reception SIRs. Douzono does not contrive such a method.

Concerning paragraph 18, beginning on page 7 of the Office Action, directed to claim 3, Applicant submits the following:

Relative to the Examiner's indication that to find the maximum value S_{max} from among the CH in order to determine how the power adjustments should be made is obvious, the corresponding part of Sundelin discloses that an object SIR is changed along Outer Loop Power Control, and then power of a base station near a terminal is decreased and power of a base station far from a terminal is increased. However, in contrast, the present invention shows criteria where, for example, an object SIR is changed in response to a

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difference between the top two receive SIRs.

- Relative to the Examiner's indication that the step of calculating a difference (X) between the S_{max} and S_{scd} and the step of calculating the number of BTSs in which a difference between the S_{max} and the receiver SIR becomes a predetermined value T2 or less is obvious, the cited references do not disclose an advantage of the present invention that the fluctuation of an object SIR is rapidly converged.

Concerning paragraphs 19 and 20 relative to claims 4 and 5, on page 11 of the Office Action, Applicant submits the following:

- The corresponding part of Douzono may disclose that quality improves when a plurality of base stations are connected, it is not apparent whether one of the base stations should have a higher object SIR.
- The corresponding part of Sundelin (col. 2, line 48 – col. 3, line 60) discloses that downlink power is determined from an uplink receive SIR and a terminal's request for power control. In this way, downlink power of a nearer base station swiftly goes up and that of a farther base station swiftly goes down along with Outer Loop Power Control. The present invention improves Outer Loop Power Control where, with a difference of uplink receive SIRs, a downlink object SIR is changed instead of downlink power.

Concerning paragraph 24 on page 16 of the Office Action relative to claim 14, Applicant submits the following:

- The corresponding part of Sundelin (col. 2, line 48 – col. 3, line 60) is already referred to above. Further, Sundelin at col. 7, lines 16-43, discloses that downlink power is controlled based on an uplink receive SIR. Sundelin uses the uplink receive SIR for the downlink power control, not for a

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downlink object SIR. Therefore, the present invention and Sundelin differ from each other.

- Moreover, the corresponding part of Chheda discloses that power of a base station is reduced when the base station with the maximum Eb/No communicates with intense power. The present invention compares uplink receive SIRs, and does not compare downlink power.

Concerning paragraph 25 on page 17 of the Office Action related to claim 15, control of transmission power in Chheda and control of an object SIR in the present invention are essentially different from each other.

Therefore, Applicant submits that there are elements of the claimed invention that are not taught or suggested by Sundelin, Douzono, or Chheba, and the Examiner is respectfully requested to withdraw these rejections.

III. FORMAL MATTERS AND CONCLUSION

In the Office Action dated April 6, 2005, the Examiner alleges that the IDS filed on December 19, 2000, fails to comply with 37 CFR §1.98(a)(2) because a legible copy of the reference (article by Kojiro Hamabe) was not provided. Applicant requests that the Examiner clarify on the record exactly how the submission is “not legible”, since Applicant’s copy of the IDS submittal indicates that the foreign-language document is indeed “legible”, since the print is clearly discernible.

That is, if the Examiner considers the document “not legible” because no English translation was provided, Applicant submits that no English translation is required unless such translation is already in Applicant’s possession (see 37 CFR §1.98(a)(3)(ii)). The IDS clearly identified that the relevance of this reference is discussed on page 2 of the specification, as required by 37 CFR §1.98(a)(3)(i).

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Applicant, therefore, respectfully requests that the Examiner clarify on the record that another copy of this reference be provided because the original copy cannot be read by a reasonable translator of the foreign language, so that Applicant can submit another copy. A clean PTO-1440 form for this IDS is provided for the Examiner's convenience.

In view of the foregoing, Applicant submits that claims 1-23, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

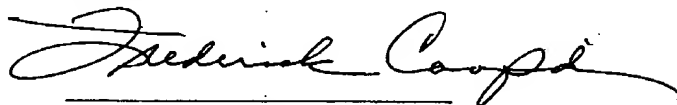
Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: _____

6/24/05

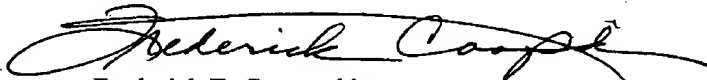


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CERTIFICATION OF TRANSMISSION

I certify that I transmitted via facsimile to (703) 872-9306 this Amendment under 37 CFR §1.116 to Examiner D. Ryman on June 24, 2005.



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